

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1.-20. (Canceled)

21. (Currently Amended) A process for the synthesis of a fluorocarbon compound, comprising reacting:

a hydrocarbyl compound containing an sp^3 -hybridized halophoric carbon atom bearing at least two halogen atom substituents, at least one halogen atom having an atomic number greater than that of fluorine and said halophoric carbon atom being bonded to at least one chalcogen; with

~~a peroxide compound~~ or a halogen reactant,

wherein the hydrocarbyl compound is represented by formula (II):



wherein,

R is a halogen, an electron-withdrawing group or a hydrocarbylchalcogenyl group, a hydrocarbyl radical or the sulfur, selenium or tellurium counterparts thereof;

X is a halogen;

Y is a chalcogen;

r is 0, 1 or 2, with the proviso that when Y is oxygen, r is equal to 0; and

R' and R'', which may be identical or different, are each hydrogen, or an aryl or lower alkyl radical;

Ar is a compound having at least one double bond and in which the carbon atom from which the double bond depends is an sp^1 carbon or an sp^2 carbon.

22. (Canceled)

23. (Previously Presented) The process of Claim 21, wherein Ar is a lower aryl radical having not more than 10 carbon atoms.

24.-25. (Canceled)

26. (Previously Presented) The process of Claim 21, wherein the halogen reactant is chlorine or fluorine.

27. (Previously Presented) The process of Claim 21, wherein said chalcogen is sulfur.

28. (Previously Presented) The process of Claim 27, wherein said sulfur is in the form of a sulfone, a sulfoxide or a sulfenate.

29. (Canceled)

30. (Previously Presented) The process of Claim 21, wherein the amount of the halogen reactant is in the range from about 0.5 to about 1.5 times the stoichiometric amount.

31. (Previously Presented) The process of Claim 21, wherein the amount of the halogen reactant is in the range from about 0.9 to about 1.3 times the stoichiometric amount.

32. (Previously Presented) The process of Claim 27, wherein the hydrocarbyl compound comprises a perfluorinated carbon atom vicinal to the sulfur atom.

33. (Previously Presented) The process of Claim 32, wherein the hydrocarbyl compound is reacted with the halogen reactant to form a sulfinyl halide.

34. (Previously Presented) The process of Claim 33, wherein the halogen reactant is chlorine.

35. (Previously Presented) The process of Claim 21, wherein the halogenation reaction is carried out in a dilute non-polar, essentially anhydrous and chlorine-insensitive solvent.

36. (Previously Presented) The process of Claim 35, wherein the solvent is unable to dissolve more than 5% mass of water.

37. (Previously Presented) The process of Claim 35, wherein the content of water in the solvent is at most 1/3 in mole of the hydrocarbyl compound.

38. (Previously Presented) The process of Claim 35, wherein the content of water in the solvent is at most 1/5 in mole of the hydrocarbyl compound.

39. (Previously Presented) The process of Claim 35, wherein the content of water in the solvent is at most 1/10 in mole of the hydrocarbyl compound.

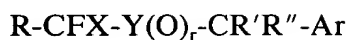
40. (Previously Presented) The process of Claim 35, wherein the halogenation is carried out at a temperature at most equal to 100°C.

41. (Currently Amended) A process for the synthesis of a fluorocarbon compound, comprising reacting:

a hydrocarbyl compound containing an sp^3 -hybridized halophoric carbon atom bearing at least two halogen atom substituents, at least one halogen atom having an atomic number greater than that of fluorine and said halophoric carbon atom being bonded to at least one chalcogen; with

~~a peroxide compound~~ or a halogen or a halogen-base complex.

42. (Previously Presented) The process of Claim 41, wherein the hydrocarbyl compound is represented by formula (II):



(II)

wherein,

R is a halogen, an electron-withdrawing group or a hydrocarbylchalcogenyl group, a hydrocarbyl radical or the sulfur, selenium or tellurium counterparts thereof;

X is a halogen;

Y is a chalcogen;

r is 0, 1 or 2, with the proviso that when Y is oxygen, r is equal to 0; and

R' and R'', which may be identical or different, are each hydrogen, or an aryl or lower alkyl radical;

Ar is a compound having at least one double bond and in which the carbon atom from which the double bond depends is an sp¹ carbon or an sp² carbon.

43. (Previously Presented) The process of Claim 41, wherein said halogen-base complex is an HF-base complex.